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ABSTRACT

This paper analyzes the implications of a school's physcial environment for children's development. Its purpose is to draw the attention of educators to the implications of the physical environment for the child's development and to invite them to participate in the process whereby the design program of schools is formulated. The paper presents the social implications of the design approach according to which the school is planned. A distinction is made between the two different design approaches (the functional and the territorial) that appear confounded in existing schools. The implications of each of them for the child's development and ability to learn is discussed. Finally, the paper proposes a combined approach to school design based on children's developmental needs. (Author/CJH)

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ARCHITECTURE AS DETERMINING THE CHILD'S PLACE IN ITS SCHOOL

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Abstract

The purpose of this paper is to draw the attention of educators to the implications of the physical environment for the child's development and to invite them to participate in the process whereby the design program of schools is formulated.

The paper presents the social implications of the design approach according to which the school is planned.

A distinction is made between the two different design approaches (the functional and the territorial) that appear confounded in existing schools. The implications of each of them for the child's development and ability to learn is discussed.

Finally, the paper proposes a combined approach to school design based on children's developmental needs.

THE PHYSICAL ENVIRONMENT AS AN OBJECT FOR DISCUSSION

The school building serves as a meeting-place for children and their peers throughout their childhood and houses the institutionalized educational practice of the state.

The present discussion deals with the physical elements of this place, with a view to relating their properties to the child's

behaviour, way of life and development.

Most educators do not regard the physical environment as an object for discussion, let alone for modification; theoreticians are mainly concerned with social aspects of the environment whereas practitioners do their best to accommodate themselves to it as though it were handed down from "on high" and not to be questioned. In reality, however, it is largely man-made and as such is designed according to human concepts and principles and should be expected to satisfy the relevant human criteria.

The three fundamental humanistic criteria, which inspire the main streams of philosophy (logic, ethics and aesthetics) are the right, the good and beauty (Lalo, 1949). All of them are reflected in the man-made environment and are affected by its properties:

- In facilitating or inhibiting organizational processes and serving as a suitable infrastructure for human action - the man-made environment operates in the domain of the rights.
- In bringing people together face to face, in opposition and side-by-side in interactive or parallel contexts it operates in the domain of the good.
- In controlling stimuli to our senses from natural and man-made sources it operates in the domain of beauty.

Where children are concerned the environment serves not only as a social framework, a background for events and an infrastructure for action but also as a distinct central object of learning; an object from which children derive most of their cognitive notions (Dewey, 1962; Piaget, 1964).

It is therefore necessary that educators and architects together should turn their attention to the principles underlying environmental design, examine their sociological and psychological consequences and follow closely the design stages, in order to ensure that the design principles will indeed support the educational goals.

The relationships between design concepts and educational goals, can be examined from different points of view. This discussion will deal with the socio-spatial one, which on the one hand covers the most basic factors of learning and education and on the other hand, has far-reaching implications on the environmental design.

THE PHYSICAL ENVIRONMENT AS A SOCIO-SPATIAL SYSTEM

The environment serves as a background for a variety of social encounters and groupings. Its design provides a framework and demarcates a domain for a given population, mostly with a view to the achievement of specific goals or the realization of specific assignments. The size of the population of a given

domain, the relationships of its members among themselves and to the domain, their physical "spacing" and their degree of mutual exposure - all these (and others) are distinct design aspects which affect the sensations, responses and functioning of each individual within the domain (Ittelson, Proshansky, Rivlin, Winkel, 1974). Children appear to be influenced by the physical environment on still another plane; they not only respond directly to a given socio-spatial situation, but are also affected by it indirectly by virtue of their being subjected almost everywhere to control by adults, who regulate their behavior. (Golan, Mackintosh, Rothenberg, Rivlin and Wolfe, 1976; Parke, 1978).

The Territorial Meaning of the Child's Home-Range

Most studies to date on the interrelationship between the environment and the child have centered on behaviors and responses within one particular space. However, as investigation which strives to arrive at design conclusions, or to be acquainted with the environmental factors influencing childrens' conceptual world; independence and orientability, should cover all the spaces in which they are involved, including the nature of their interconnections (Golan et.al. 1976). Such investigation necessarily links these spaces on a territorial rather than on a functional basis, taking the child occupying them rather than the action taking place in them as their common denominator. All of the child's spaces

within his/her home range can be described schematically by a territorial model, similar to that proposed by Rapoport (1972) and Ross (1968) on the basis of ethnological paradigms. The "home range" encompasses the child's home proper, the school, the playgrounds, the homes of his friends, the shop, the clinic etc., and the paths connecting them. Children usually know their way about it and are familiar with its physical features, its occupants and the rules of behaviour prevailing in each of its settings.

Under ordinary circumstances, it can be assumed to expand as the child grows, wanders further out and learns to know new places, people and codes of behaviour; in the course of these developments he/she is exposed to singular experiences which combine to shape his/her personality. The territorial model bears a striking structural resemblance to the child's experiental and conceptual world as visualized by Holt (1972); there being a considerable similarity between the types of domains within the home range and outside it - on the one hand, and the types of "worlds" the child learns to know - on the other. Furthermore an analogy exists between the concept of learning as expansion of the self - on the one hand, and the widening of the childrens' home range as they grow up, on the other. This resemblance is more than purely formal as most scientists and educators agree that children's contact with their environment and their activities within it, reinforce their motor ability, enrich their senses and build their

cognitive and emotional world (Dewey, 1962; Erikson, 1963; Piaget, 1964).

In keeping with the criteria of the territorial model, each area within the child's home range can be classified according to (1) its centrality to the child's everyday life; (2) the time spent in it; (3) its contribution to the development and expression of the child's identity; (4) the child's influence and control over the area and over the people manning it (Altman, 1975; Sebba, 1981).

Under such a classification the home and the school rate as first and second in importance, respectively. The two are similar in that, in both of them children spend several hours every day throughout their childhood years, within a defined system which plays a role in their socialization process and in which they occupy a fixed place identified as belonging to them. In both of them they are under the control of adults who are supposed to be concerned with their present and future needs.

A glance at the development of cities since the early 20th century reveals a decline in the territorial significance of the home. As a result of the functional distribution of the city, the places of employment have moved away from the residential neighbourhoods. At the beginning it was the father who left home and spent most of the day at a locality with which the family had no links, engaged in activities foreign to them,

among unfamiliar people. Later, with the mother also taking a job, the need arose for away-from-home arrangements for the children, and in fact today more and more of them spend many hours daily at the facilities provided for this purpose. In these circumstances the family as a unit spends less time at home; the children do not see their parents at work and they in turn hardly see the children at their studies and at play. As a result the socialization role and protective significance of the home has declined and the relative wright of the school in this respect has increased. The child is entitled to compensation for the deficiency at home, a duty which can be imposed on the school.

Accordingly, it is up to the school to:

(1) Make it possible for children, throughout their stay within its walls, to enjoy the present while shaping their future.

(2) Assist them with the socialization process, by making it possible for them to compete with their peers in various fields and at the same time imparting to them the conventional social values.

(3) Develop their ability to cope with changing situations, while providing them with tools for defining problems and searching for solutions.

DIFFERENT APPROACHES TO SCHOOL DESIGN

Attainment of these objectives is largely conditional on the status of the school, the question being whether it should be regarded as one of the assorted neighbourhood facilities[.e. an "installation" where children of a certain age group, with similar needs, receive the service prescribed for them by the adults, or alternatively as a territory whose uniqueness derives from the bilateral tie between it and the child and from its contribution to the latter's personality. Thus the role of the school in the home range depends inter alia on the approach according to which it is designed - functional or territorial.

The Functional Approach

The functional approach, with its origins in the '20s, is activity-oriented and allocates specific areas for the activities taking place in them, each area being adapted for maximum convenience of performance with emphasis on efficiency and minimal distances. Users are anonymous and are brought together by the common activity with which they are concerned, rather than by a desire for one another's company. In other words, the activity is fixed and the population variable; the size of the latter is fairly flexible and subject to considerations of economics and convenience. A school so designed may comprise "specialized" classrooms (natural resources room,

arithmetic room, workshop, drama room, etc.), each of them adapted for its particular purpose with the children commuting according to their class schedules.

The functional approach can be more economical and logical, and provides the school with more teaching aids - than any other approach given the same resources. Under it, the child is a quantified component required to justify the service cost, or a unit of action among other units of the same "size" and "value".

Children attending such a school are expected, on arrival, to address themselves to an assignment (library, computer room) rather than to their peers, acting in parallel with them instead of collaborating with them; to commute from point to point, to familiarize themselves with field conditions, to photograph situations, to find a "slot" for themselves and to organize for the assignment at hand. Although relegated, under the functional approach, to a parallel situation with their peers, they may find themselves at any time competing with them for the slot best suited to their needs. Having to reorganize at each point, they must invest thought and vigilance in factors quite irrelevant to the purpose of their presence there, the dynamic variability of the environment thus consumes their time and diverts their senses to the immediate surroundings. The final result is lack of a feeling of permanence: they are aware that somebody else occupied the slot before them and somebody else

again will occupy it after them, in other words - the slot does not belong to them, their occupancy is temporary.

The Territorial Approach

The territorial approach, anchored in nature and familiar from the past, is oriented towards the population in the area. Its objects are specific individuals, groups or a whole community, for which multipurpose territories are designed, adapted to their diversified needs and inclinations.

The physical features dictated by this approach are accordingly:

- Permanence of social units in multipurpose territories (need obviated for mobility during change-overs).
- Clear-cut physical definitions of socio-spatial units (irrelevant under the functional approach).
- Dimensions according to human criteria - so that the territory allocated to a given group for a given activity would not be too small for each member to retain his or her personal space, nor too large for intelligible communication within the group.

The territorial approach cannot compete with its functional counterpart in terms of the sophisticated tools the latter provides for the children - nor is it flexible in terms of the size and composition of populations and it is moreover liable to perpetuate undesirable social situations. On the other

hand, it offers advantages in terms of permanence, security, belonging and self-expression - all of them (according to Marlos (1954) and others) indispensable psychological needs which, unsatisfied at home, have to be taken care of elsewhere within the home range. Since they are a prerequisite for development of the individual's potential and learning, thinking and expressive abilities, the school is the logical place.

IMPLICATIONS OF THE DESIGN OF PRESENT DAY SCHOOLS

Present-day schools embody features of both approaches, without either of them realizing all of its advantages. Most classes accommodate groups of 30-40 children permanent in composition and in location - permanence which enables most of them to orient themselves easily within the classroom and to know one another, albeit superficially. The class is, however, for larger than any group likely to organize sponteneously for purposes of play or for any other joint occupation, and at the same time the room's layout precludes subdivision into smaller groups able to act without colliding (Gump and Ross, 1977). Studies of the influence of class size on the behaviour of the children have shown that the more crowded the classroom, the less there is scope for personal activity involving concentration, and the less there are positive social interactions; accessibility to activity sites is impaired, and freedom of choice is curtailed (Rohe & Nuffer, 1977; Swift, 1964;

Hutt & Vaizey, 1966; Loo, 1972; Fagot, 1977). The layout of the large classroom necessitates a prescribed rigid framework and a fixed program which rules out in advance any organization for mutual activities - at least during class periods.

As regards the spaces connecting the classes - in most of the social buildings the classrooms are reached through corridors whose dimensions and window layouts bear witness that they are intended purely for transit purposes - as in any contemporary office building. They are useless as meeting grounds or play areas, being designed according to the functional approach whereby study is the only activity justifying the existence of the school.

As for the schoolyard, it is mostly regarded as a "non-place" for passing the time, away from the classroom. In most schools it consists of the grounds left over after erection of the school building, without equipment or proper maintenance - in fact, it does not figure as a design entity, even though it is the "town square" in which the children meet their peers and engage in free activity.

Neither the classroom nor the corridor and schoolyard are designed so as to enable the children to organize on their own and to be engaged in self-initiated activities. The social and educational values, emanating from what children doing by themselves, free of adults' control, are totally disregarded in the school environment - not withstanding the utmost

importance assigned to them by most educators since Rousseau.

In the absence of a suitable design expression for the social interaction between the children, attention naturally turns to the interaction between them and their teacher - on the assumption that here, at least, genuine bilateral relationships should form, in accordance with most of the current educational theories.

It is none of the concern of the designer how much time the teacher actually devotes to each of the 40 students over the 45 minute class period. At the same time, the teacher must be able to see and hear them in a manner conducive to two-way communication. The quality of visual and auditory contact between people in a social or a business interrelationship is inversely proportional to the physical distance between them. Hall, 1966, Sommer, 1969, and others established that beyond a distance of 3 metres verbal communication is impossible without raising one's voice, and many non-verbal expressions are lost. Thus in present-day classrooms (7 x 7 m., the minimum for accommodating 40 children in a static seating arrangement) more than half the class are outside the teacher's communication range. A similar examination in terms of the visual angle shows that not all children seated close to the teacher fall within her/his field of vision. These facts explain the findings of Adams and Biddle (1970), according to which interaction in the class is largely confined to the front and

central rows. Children in the rear rows and on the flanks can converse among themselves without the teacher overhearing them, or communicate by facial expressions without him/her noticing it - while they themselves receive only part of the teacher's message, as they are unable to read his/her facial expressions either.

When a declared major aim of education is to help children realize their personal potential, and when in the view of most theoreticians its object is the individual child - a fixed distance of 4-6 metres between the child and the mentor clearly defeats the purpose in question.

TOWARDS A COMBINED APPROACH

So long as education keeps the child at the centre of its considerations, the architect should do the same. The territorial approach is the one which "escorts" children in everything they do throughout their stay at school; it takes cognizance of the needs outside the classroom; it seeks to reassure them, through a feeling of permanence and control at least at one definite location, and to enable them to belong to groups of a size conducive to joint action combined with adequate personal space and suitable communication distance. Moreover, as the territorial approach is sensitive to personal and social characteristics, it offers separate solutions for

different age levels, the general idea being expansion of the class range as the child grows older. For the young child, new to the place and its rules - study, work, play and service facilities should be concentrated at a single location. Such multi-purpose concentration would foster personal-environmental confidence in the children and enable them to change over smoothly from one activity to another - transitions necessitated by their shorter attention span, their greater need for study - and demonstration aids, and their inclination to movement and play. For the older, environmentally confident child, facilities can be designed on a functional basis (library, laboratory, natural resources installations in the courtyard, drama room etc.). The process of acquisition of knowledge, combined with understanding of the place and its rules, may find expression in enlargement of the functional territory. The self-contained disciplines in the higher classes may be associated with distinct study localities, possibly extending beyond the school grounds to include museums, theatres, neighbourhood facilities, parks etc. - while maintaining the child's regular base at the school and adhering to a suitable social pattern at each locality. The regular base chances confidence - a prerequisite to thinking and inquiry - while adherence to the social pattern is a prerequisite to joint action in study and play, to the capacity for self-evaluation and to preparation of the individual for his/her place in society.

The educational process does not occur in a vacuum; the physical environment of the school is involved in it and may limit or encourage its development. A learning method based on inquiry and discovery, needs to be supported by a corresponding environment worthy of exploration and rich in stimuli and opportunities.

A child who is expected to learn by active methods needs both scope and favourable social circumstances for his/her activities as well as a defined personal space in which to practise his/her abilities and maintain two way communication with his/her mentor.

Since he/she is expected to acquire values like "Love your neighbour as yourself" he/she must not be confronted with situations in which his/her existential interests would be opposed with those of his/her peers.

REFERENCES

Adams, R. & Biddle, B. (1970) - Realities of Teaching. Exploration with videotape. New York, Holt, Rinehart and Winston.

Altman, I. (1975) - The Environment and Social Behavior. Brooks/Cole Publishing Co., Montrey, California, U.S.A.

Dewey, J. (1962) - The Child and the Curriculum. The University of Chicago Press, Chicago, U.S.A.

Erikson, E. (1963) - Childhood and Society (2nd ed.) New York, Norton.

Fagot, B.I. (1977) - Variations in Density: Effect on Task and Social Behaviors of Pre-School Children. Developmental Psychology 13 pp. 166-167.

Golan, M.B., Mackintosh, E., Rothenberg, M., Rivlin, L.G. and Wolfe, M. (1976 May) - Children Environments Evaluation Research; Built Environment. Paper presented at the Environmental Design Research Association Meetings, Vancouver, B.C.

Gump, P.V., & Ross, R. (1977) - What Happened in Schools of Open Design? Mimeo Department of Psychology, University of Kansas, U.S.A.

Hall, E.T. (1966) - The Hidden Dimension. New York, Garden City, Doubleday.

Holt, J. (1972) - What do I do Monday? New York: Dell Pub. Com. A Delta Book, pp. 20-31.

Hutt, C. & Vaizey M. (1966) - Differential Effects of Group Density on Social Behavior. Nature, 209, pp. 1371-1372.

Ittelson, W.H., Proshansky, H.M., Rivlin, L.G., Winkel, G.H. (1974) - An Introduction to Environmental Psychology. Holt, Rinehart & Winston Inc.

Lalo, Ch. (1949) - Notions d'Esthetique (J. Ur trans.) The Magnes Press, The Hebrew University (Original work published 1920).

Loo, C.M. (1972) - The Effects of Spatial Density on the Social Behavior of Children. Journal of Applied Social Psychology 2, pp. 372-381.

Maslow, A.H. (1954) - Motivation and Personality.London, Harper & Row.

Parke, R.D. (1978) - Children's Home Environments Social and Cognitive E-fects. In I.Altman & J.F. Wohlwill eds., Children and the Environment. New York, Plenum Press.

Piaget, J. (1964) - Six Etudes de Psychologie. Paris, Societe Nouvelle des Editions Gonthier.

Rapoport, A. (May 1972) - Some Perspective on Human Use and Organization of Space. Symposium on Space and Territory, Australian Association of Social Anthropologists.

Rohe, W.M. & Nuffer, E.L. (1977) - The Effects of Density and Partitioning on Children's Behavior. Presented at the 85th Meeting of A.P.A., San Francisco, Calif.

Ross, P.P. (1968) - Jurisdiction an Ecological Concept (Human Relations) 21, pp. 75-84.

Sebba, R. (1981) - The Territorial Division of the Apartment as a Factor Influencing the Residents' Attitude Towards It. D.Sc. Thesis. Technion - Israel Institute of Technology, Haifa, Israel.

Sommer, R. (1969) - Personal Space - The Behavioral Basis for Design. Prentice Hall Inc., Englewood Cliffs, New Jersey.

Swift, J.W. (1964) - Effects of Early Group Experience: The Nursery School and Day Nursery. In M.Hoffman & I.Hoffman (eds.) Child Development Research , Vol. 1, New York, Russell Sage Foundation.